

Notice of Allowability

Application No.

10/601,307

Examiner

Phu Vu

Applicant(s)

KUBO ET AL.

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/15/2007.
2. ☒ The allowed claim(s) is/are 1-13 and 16-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 5/15/2007
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


David Nelms
Supervisory Patent Examiner
Technology Center 2800

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows: Title changed to "Liquid crystal display with unit radially-inclined liquid crystal in unit solid portions arranged in a single direction."

Allowable Subject Matter

Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance: Regarding claims 1-20 there is no prior art of record that teaches a liquid crystal display device with a plurality of picture element regions defined by a first electrode provided on one side of the first substrate having a plurality of picture element regions so that A) for the first electrode unit solid portions are arranged in only a first directions B) forms a plurality of liquid crystal domains in the plurality of unit solid portions each plurality of liquid crystal domains taking a radially-inclined orientation C) the plurality of each of the picture element regions are arranged in a matrix pattern including a plurality of rows extending in the second direction different from the first direction and a plurality of columns extending in the first direction D) a polarity of voltage applied across the liquid crystal in a first picture element region among the plurality of picture element regions is different

Art Unit: 2871

from a polarity of a voltage applied across the liquid crystal in a second picture element region that bellows to the same row as that of the first picture element region and belongs to a column adjacent to a column which the first picture element region belongs in each frame E) the first substrate includes open regions that do not overlap with the first electrode F) when a voltage is applied between the first electrode and the second electrode the liquid crystal layer forms a plurality of additional liquid crystal domains in the plurality of open regions by inclined electric fields each of the additional liquid crystal domains taking a radially-inclined orientation.

The references teaches various combinations of A-F however they cannot be combined in such a way to render all the features of A-F obvious. For instance Kim "366" discloses arranging unit solid portions in only one direction however borrowing the shape of the pixel electrode and combining it with a separate common electrodes it is not appeared that the combined structure would still meet features such as a radially inclined open regions as well as radially inclined LC in the unit solid regions. Especially since the common electrodes of Kim "366" are not explicitly designed to provide radially inclined orientations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Art Unit: 2871


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562.

The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phu Vu
Examiner
AU 2871



David Nelms
Supervisory Patent Examiner
Technology Center 2800